REMARKS

Claims 146-171, 173, and 175-205 are pending in the above-identified application. Claims 146-170 and 177-205 have been withdrawn, and claims 171, 173, 175, and 176 were rejected.

I. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 171, 173, and 175-176 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schetzina (U.S. Patent No. 5,670,798). Applicants respectfully traverse this rejection.

Claim 171 is directed to a semiconductor light emitting device comprising an active layer, an optical guide layer, a cap layer, and a p-type clad layer. The active layer is made of a first nitride III-V compound semiconductor containing In and Ga. The optical guide layer is in contact with the active layer, and is made of a second nitride III-V compound semiconductor containing Ga. The cap layer is in contact with the optical guide layer, and is made of a third nitride III-V compound semiconductor containing Al and Ga. The p-type clad layer is in contact with the cap layer, and is made of a fourth nitride III-V compound semiconductor containing Al and Ga, and is different from the third nitride III-V compound semiconductor. The cap layer has a band gap larger than that of the p-type clad layer. The thickness of the cap layer is equal to or more than 2 nm and equal to or less than 20 nm.

Schetzina discloses an active layer in contact with a cladding layer, which is in turn in contact with a gradient layer. Schetzina also discloses, in Fig. 30, that in the case of laser diodes, light guiding layers may be disposed between the active layer and the cladding layer. Schetzina, at no time, mentions the use of a cap layer between the active layer and the cladding layer.

In the office action, however, the Examiner calls cladding layer AlGaN 114a of Schetzina a cap layer, and graded layer 122a a cladding layer. The Examiner then further contends that it would have been obvious to form cladding layer 114a with a thickness of 2-20nm to function as a cap layer. There is absolutely no suggestion to do so and in fact could result in a non-functional device.

Cladding layers are typically 200nm - 500nm in thickness. Thus, one skilled in the art manufacturing a device according to the disclosure in Schetzina would not even consider forming cladding layer 114a with a thickness of 2-20nm, as recited in claim 171. In fact, doing so is counter-intuitive since it is unlikely that layer 114a would be able to perform the function of cladding layer, as required by Schetzina, if it is constructed with such a small thickness. Similarly, the Examiner can identify no suggestion in Schetzina that graded layer 122a could be used as a cladding layer instead of layer 114a, since graded layer 122a is constructed for the different purpose of providing a low resistance electronic link between the cladding layer and GaN layer 124a. Thus, there is simply no support in the specification for the Examiner's purported redesign of the Schetzina device. It not only would have been non-obvious to transform the cladding layer 114a of Schetzima into a 2-20nm thick cap layer, but doing so would have been counter to the very disclosure of Schetzina. Accordingly, Applicant submits that 171, 173, 175, and 176 are in condition for allowance.

II. Conclusion

In view of the above amendments and remarks, Applicants submit that all claims are clearly allowable over the cited prior art, and respectfully request early and favorable notification to that effect.

Respectfully submitted,

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